STATE OF CALIFORNIA
HVAC SYSTEM REQUIREMENTS
CEC-NRCC-MCH-02-E (Revised 06/14) — CALIFORNIA ENERGY COMMISSION — NRCC-MCH-02-E

CERTIFICATE OF COMPLIANCE

HVAC Dry System Requirements (Page 1 of 3)

Project Name: Walgreens — Date Prepared: 10/10/2014

Equipment Tags and System Description[1]		RTU-1	RTU-2	RTU-3 & 4
MANDATORY MEASURES	*T-24 Sections*	*Reference to the Requirements in the Contract Documents[2]*		
Heating Equipment Efficiency[3]	110.1 or 110.2(a)	M-610	M-610	M-610
Cooling Equipment Efficiency[3]	110.1 or 110.2(a)	M-610	M-610	M-610
HVAC or Heat Pump Thermostats	110.2(b), 110.2(c)	M-610	M-610	M-610
Furnace Standby Loss Control	110.2(d)	M-610	M-610	M-610
Low leakage AHUs	110.2(f)	M-610	M-610	M-610
Ventilation[4]	120.1(b)	M-610	M-610	M-610
Demand Control Ventilation[5]	120.1(c)4	M-610	M-610	M-610
Occupant Sensor Ventilation Control[6]	120.1(c)5, 120.2(e)3	M-610	M-610	M-610
Shutoff and Reset Controls[7]	120.2(e)	M-610	M-610	M-610
Outdoor Air and Exhaust Damper Control	120.2(f)	M-610	M-610	M-610
Isolation Zones	120.2(g)	M-610	M-610	M-610
Automatic Demand Shed Controls	120.2(h)	M-610	M-610	M-610
Economizer FDD	120.2(i)	M-610	M-610	M-610
Duct Insulation	120.4	M-610	M-610	M-610
PRESCRIPTIVE MEASURES				
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	Y	Y	Y
Supply Fan Pressure Control	140.4(c)	M-610	M-610	M-610
Simultaneous Heat/Cool[8]	140.4(d)	M-610	M-610	M-610
Economizer	140.4(e)	M-610	M-610	M-610
Heat and Cool Air Supply Reset	140.4(f)	M-610	M-610	M-610
Electric Resistance Heating[9]	140.4(g)	M-610	M-610	M-610
Duct Leakage Sealing and Testing.[10]	140.4(l)	M-610	M-610	M-610

Notes:
1. *Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together.*
2. *Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system.*
3. *The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq.*
4. *Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central unit schedules and sequences of operation. If one or more space is naturally ventilated identify where this is documented in the plans and specifications. Multiple zone central air systems must also provide a MCH-03-E form.*
5. *If one or more space has demand controlled ventilation identify where it is specified including the sensor specifications and the sequence of operation.*
6. *If one or more space has occupant sensor ventilation control identify where it is specified including the sensor specifications and the sequence of operation*
7. *If the system is DDC identify the sequences for the system start/stop, optimal start, setback (if required) and setup (if required). For all systems identify the specification for the thermostats and time clocks (if applicable).*
8. *Identify where the heating, cooling and deadband airflows are scheduled for this system. Include a reference to the specification of the zone controls. Provide a MCH-03-E form.*
9. *Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.*
10. *If duct leakage sealing and testing is required, a MCH-04-A form must be submitted.*

STATE OF CALIFORNIA
HVAC SYSTEM REQUIREMENTS
CEC-NRCC-MCH-02-E (Revised 06/14) — CALIFORNIA ENERGY COMMISSION — NRCC-MCH-02-E
CERTIFICATE OF COMPLIANCE
HVAC Dry System Requirements (Page 1 of 3)
Project Name: Walgreens — Date Prepared: 10/10/2014

Equipment Tags and System Description[1]		RTU-5	RTU-6	
MANDATORY MEASURES	*T-24 Sections*	*Reference to the Requirements in the Contract Documents[2]*		
Heating Equipment Efficiency[3]	110.1 or 110.2(a)	M-610	M-610	
Cooling Equipment Efficiency[3]	110.1 or 110.2(a)	M-610	M-610	
HVAC or Heat Pump Thermostats	110.2(b), 110.2(c)	M-610	M-610	
Furnace Standby Loss Control	110.2(d)	M-610	M-610	
Low leakage AHUs	110.2(f)	M-610	M-610	
Ventilation[4]	120.1(b)	M-610	M-610	
Demand Control Ventilation[5]	120.1(c)4	M-610	M-610	
Occupant Sensor Ventilation Control[6]	120.1(c)5, 120.2(e)3	M-610	M-610	
Shutoff and Reset Controls[7]	120.2(e)	M-610	M-610	
Outdoor Air and Exhaust Damper Control	120.2(f)	M-610	M-610	
Isolation Zones	120.2(g)	M-610	M-610	
Automatic Demand Shed Controls	120.2(h)	M-610	M-610	
Economizer FDD	120.2(i)	M-610	M-610	
Duct Insulation	120.4	M-610	M-610	
PRESCRIPTIVE MEASURES				
Equipment is sized in conformance with 140.4 (a & b)	140.4(a & b)	Y	Y	
Supply Fan Pressure Control	140.4(c)	M-610	M-610	
Simultaneous Heat/Cool[8]	140.4(d)	M-610	M-610	
Economizer	140.4(e)	M-610	M-610	
Heat and Cool Air Supply Reset	140.4(f)	M-610	M-610	
Electric Resistance Heating[9]	140.4(g)	M-610	M-610	
Duct Leakage Sealing and Testing.[10]	140.4(l)	M-610	M-610	

Notes:
1. *Provide equipment tags (e.g. AHU 1 to 10) and system description (e.g. Single Duct VAV reheat) as appropriate. Multiple units with common requirements can be grouped together.*
2. *Provide references to plans (i.e. Drawing Sheet Numbers) and/or specifications (including Section name/number and relevant paragraphs) where each requirement is specified. Enter "N/A" if the requirement is not applicable to this system.*
3. *The referenced plans and specifications must include all of the following information: equipment tag, equipment nominal capacity, Title 24 minimum efficiency requirements, and actual rated equipment efficiencies. Where multiple efficiency requirements are applicable (e.g. full- and part-load) include all. Where appliance standards apply (110.1), identify where equipment is required to be listed per Title 20 1601 et seq.*
4. *Identify where the ventilation requirements are documented for each central HVAC system. Include references to both central unit schedules and sequences of operation. If one or more space is naturally ventilated identify where this is documented in the plans and specifications. Multiple zone central air systems must also provide a MCH-03-E form.*
5. *If one or more space has demand controlled ventilation identify where it is specified including the sensor specifications and the sequence of operation.*
6. *If one or more space has occupant sensor ventilation control identify where it is specified including the sensor specifications and the sequence of operation*
7. *If the system is DDC identify the sequences for the system start/stop, optimal start, setback (if required) and setup (if required). For all systems identify the specification for the thermostats and time clocks (if applicable).*
8. *Identify where the heating, cooling and deadband airflows are scheduled for this system. Include a reference to the specification of the zone controls. Provide a MCH-03-E form.*
9. *Enter N/A if there is no electric heating. If the system has electric heating indicate which exception to 140.4(g) applies.*
10. *If duct leakage sealing and testing is required, a MCH-04-A form must be submitted.*

CA Building Energy Efficiency Standards - 2013 Nonresidential Compliance — June 2014

STATE OF CALIFORNIA
MECHANICAL VENTILATION AND REHEAT
CEC-MCH-03-E (Revised 06/14) — CALIFORNIA ENERGY COMMISSION — NRCC-MCH-03-E

CERTIFICATE OF COMPLIANCE

Mechanical Ventilation & Reheat (Page 1 of 2)

Project Name: Walgreens — Date Prepared: 10/10/2014

	ACTUAL GROSS INDO FROM EQUIPMENT SCHEDULES, ETC)			AREA BASIS			OCCUPANCY BASIS			MINIMUM		VAV Reheated Primary Air CFM			VAV Deadband Primary Air CFM		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
	ZONE/ SYSTEM/ VAV BOX TAG	DESIGN PRIMARY COOLING AIRFLOW (CFM)	DESIGN PRIMARY HEATING AIRFLOW (CFM)	CNTRL TYPE DDC (Y/N)	TRANSFER AIRFLOW (CFM)	CONDI-TIONED AREA (ft^2)	MIN CFM PER AREA	MIN CFM BY AREA	NUM. OF PEOPLE	CFM PER PERSON	MIN CFM BY OCCU-PANT	REQ'D VENT AIRFLOW (MAX OF I OR L) (CFM)	COM-PLIES	DESIGN PRIMARY COOLING AIR (50% DOC,30% NON-DOC) (CFM)	MAXIMUM REHEAT CFM (MAX OF M OR O)	COM-PLIES?	MIN CFM (20% DOC, N/A NON-DOC) (CFM)	(larger of M or R, N/A for NON-DDC) (CFM)	COM-PLIES
Entran						1,730	0.20	346	14.0	31.0	433	433	Y							
										Total	433									
Emplo						190	0.15	29	4.0	15.0	59	59	Y							
Tech (						68	0.15	10	0.2	50.0	10	10	Y							
Office						182	0.15	27	3.0	15.0	45	45	Y							
Suppo						585	0.15	88	5.9	15.0	88	88	Y							
										Total	202									
Gener						8,197	0.20	1,639	54.6	37.5	2,049	2,049	Y							
										Total	2,049									
Pharm						1,564	0.20	313	16.0	24.4	391	391	Y							
										Total	391									

Yellow shaded cells require user input. Remaining cells are protected and automatic.
A. The largest amount of primary air supplied by the terminal unit when it's operating in the cooling mode.
B. The smallest amount of primary air supplied by the terminal unit in the deadband mode.
C. The largest amount of primary air supplied by the terminal unit when it's operating in the heating mode.
D. A terminal unit can be controlled with DDC controls, or non-DDC controls. Each control category has different reheat limitations in code.
E. Transfer Air must be provided where Required Ventilation Airflow (Column M) is greater than the Design Primary Deadband Airflow (Column C).
F. Minimum ventilation rate per Section §120.1. Table 120.1-A.
G. Based on number of fixed seats where applicable or the greater of the expected number of occupants and 50% of the CBC occupant load for egress purposes for spaces without fixed seating.
H. Required Ventilation Airflow (Req'd Ventilation Airflow) is the larger of the ventilation rates calculated on an AREA BASIS or OCCUPANCY BASIS (Column I or L).
I. Required Ventilation Airflow (Req'd Ventilation Airflow) is the larger of the ventilation rates calculated on an AREA BASIS or OCCUPANCY BASIS (Column I or L).
J. Design Primary Cooling Airflow * 0.50 for DDC. Design Primary Cooling Airflow * 0.30 for Non-DDC. If the Design Primary Cooling Airflow is less than 300 cfm, then this is not applicable.
K. Maximum of Column M and Column O. If the Design Primary Cooling Airflow is 300 cfm or less, then this is not applicable.
L. Design Primary Cooling Airflow * 0.20 for DDC. Not applicable for Non-DDC zones or zones where Design Primary Cooling Airflow is ≤ 300 cfm or less.
M. Maximum of Column M and Column R. Not applicable if the Design Primary Cooling Airflow is ≤ 300 cfm or less.
T. This column identifies whether or not the Design Primary Deadband Airflow at the zone level, complies or not. It compares the value in column S to the value in column C.

STATE OF CALIFORNIA
MECHANICAL VENTILATION AND REHEAT
CEC-MCH-03-E (Revised 06/14) — CALIFORNIA ENERGY COMMISSION — NRCC-MCH-03-E
CERTIFICATE OF COMPLIANCE
Mechanical Ventilation & Reheat (Page 2 of 2)
Project Name: Walgreens — Date Prepared: 10/10/2014

	ACTUAL GROSS INDO FROM EQUIPMENT SCHEDULES, ETC)			AREA BASIS			OCCUPANCY BASIS			MINIMUM		VAV Reheated Primary Air CFM			VAV Deadband Primary Air CFM		
	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
	ZONE/ SYSTEM/ VAV BOX TAG	DESIGN PRIMARY COOLING AIRFLOW (CFM)	DESIGN PRIMARY HEATING AIRFLOW (CFM)	CNTRL TYPE DDC (Y/N)	TRANSFER AIRFLOW (CFM)	CONDI-TIONED AREA (ft^2)	MIN CFM PER AREA	MIN CFM BY AREA	NUM. OF PEOPLE	CFM PER PERSON	MIN CFM BY OCCU-PANT	REQ'D VENT AIRFLOW (MAX OF I OR L) (CFM)	COM-PLIES	DESIGN PRIMARY COOLING AIR (50% DOC,30% NON-DOC) (CFM)	MAXIMUM REHEAT CFM (MAX OF M OR O)	COM-PLIES?	MIN CFM (20% DOC, N/A NON-DOC) (CFM)	(larger of M or R, N/A for NON-DDC) (CFM)	COM-PLIES
Gener						1,500	0.15	220	3.0	127.5	383	383	Y							
										Total	383									

Yellow shaded cells require user input. Remaining cells are protected and automatic.
A. The largest amount of primary air supplied by the terminal unit when it's operating in the cooling mode.
B. The smallest amount of primary air supplied by the terminal unit in the deadband mode.
C. The largest amount of primary air supplied by the terminal unit when it's operating in the heating mode.
D. A terminal unit can be controlled with DDC controls, or non-DDC controls. Each control category has different reheat limitations in code.
E. Transfer Air must be provided where Required Ventilation Airflow (Column M) is greater than the Design Primary Deadband Airflow (Column C).
F. Minimum ventilation rate per Section §120.1. Table 120.1-A.
M. Required Ventilation Airflow (Req'd Ventilation Airflow) is the larger of the ventilation rates calculated on an AREA BASIS or OCCUPANCY BASIS (Column I or L).
N. Based on number of fixed seats where applicable or the greater of the expected number of occupants and 50% of the CBC occupant load for egress purposes for spaces without fixed seating.
O. Design Primary Cooling Airflow * 0.50 for DDC. Design Primary Cooling Airflow * 0.30 for Non-DDC. If the Design Primary Cooling Airflow is less than 300 cfm, then this is not applicable.
P. Maximum of Column M and Column O. If the Design Primary Cooling Airflow is 300 cfm or less, then this is not applicable.
Q. This column identifies whether or not the Design Primary Reheat Airflow at the zone level, complies or not. It compares the value in column P to the value in column D.
R. Design Primary Cooling Airflow * 0.20 for DDC. Not applicable for Non-DDC zones or zones where Design Primary Cooling Airflow is ≤ 300 cfm or less.
S. Maximum of Column M and Column R. Not applicable if the Design Primary Cooling Airflow is ≤ 300 cfm or less.
T. This column identifies whether or not the Design Primary Deadband Airflow at the zone level, complies or not. It compares the value in column S to the value in column C.

STATE OF CALIFORNIA
WATER HEATING SYSTEM GENERAL INFORMATION
CEC-NRCC-PLB-01-E (Revised 06/14) — CALIFORNIA ENERGY COMMISSION — NRCC-PLB-01-E

CERTIFICATE OF COMPLIANCE

Water Heating System General Information (Page 1 of 2)

Project Name: Walgreens — Date Prepared: 10/10/2014

A. GENERAL INFORMATION/SYSTEM INFORMATION

1.	Water Heater System Name:	*Standard Gas 50 gal or Less*
2.	Water Heater System Configuration:	*Non-Central*
3.	Water Heater System Type:	
4.	Building Type:	
5.	Total Number of Water Heaters in Systems:	*1*
6.	Central DHW Distribution Type:	*n/a*
7.	Dwelling Unit DHW Distribution Type:	*Parallel Piping*

B. WATER HEATER INFORMATION
Each water heater type requires a separate form.

1.	Water Heater Type:	*Small Storage Gas*
2.	Fuel Type	*Gas Fired*
3.	Number of Identical Water Heaters:	*1*
4.	Efficiency:	*0.58*
5.	Required Minimum Efficiency:	*0.58*
6.	Standby loss percent or Standby loss total:	*0.000*
7.	Rated Input	*40,000*
8.	Pilot Energy:	
9.	Water Heater Tank Storage Volume:	*50*
10.	Exterior Insulation On Water Heater:	*0*
11.	Volume of Supplemental Storage:	
12.	Internal Insulation on Supplemental Storage:	
13.	Exterior Insulation on Supplemental Storage:	

PLUMBING COMPLIANCE FORMS & WORKSHEETS (check box if worksheet is included)

For detailed instructions on the use of this and all Energy Efficiency Standards compliance forms, refer to the 2013 Nonresidential Manual

Note: The Enforcement Agency may require all forms to be incorporated onto the building plans.

YES	NO	Form/Worksheet #	Title
☑	☐	NRCC-PLB-01-E	Certificate of Compliance, Declaration. Required on plans for all submittals.
☐	☐	NRCI-PLB-01-E	Certificate of Installation. Required on plans for all submittals.
☐	☐	NRCI-PLB-02-E	Certificate of Installation, required on central systems in high-rise residential, hotel/motel application.
☐	☐	NRCI-PLB-03-E	Certificate of Installation, required on single dwelling unit systems in high-rise residential, hotel/motel application.
☐	☐	NRCI-PLB-21-H	Certificate of Installation, required on HERS verified central systems in high-rise residential, hotel/motel application.
☐	☐	NRCI-PLB-22-H	Certificate of Installation, required on HERS verified single dwelling unit systems in high-rise residential, hotel/motel application.
☐	☐	NRCI-STH-01-E	Certificate of Installation, required on any solar water heating

STATE OF CALIFORNIA
MECHANICAL EQUIPMENT DETAILS (Part 1 of 2) NRCC-MCH-08-E
Project Name: Walgreens — Date: 10/10/2014

CHILLER AND TOWER SUMMARY

Equipment Name	Type	Qty.	Efficiency	Tons	Qty.	PUMPS GPM	PUMPS BHP	Pump Control

DHW / BOILER SUMMARY

System Name	Type	Distribution	Qty.	Rated Input	Vol. (Gals).	Energy Factor or RE	Standby Loss or Pilot	Tank Ext. R-Value	Status
Standard Gas 50 gal or Less	*Small Storage Gas*	*Parallel Piping*	*1*	*40,000*	*50*	*0.58*	*n/a*	*n/a*	*New*

MULTI-FAMILY CENTRAL WATER HEATING DETAILS

Control	Hot Water Pump Qty.	Hot Water Pump HP	Type	In Plenum	Hot Water Piping Length (ft) Outside	Buried	Add ½" Insulation
							☐
							☐
							☐

CENTRAL SYSTEM RATINGS

System Name	Type	Qty.	HEATING Output	HEATING Aux. kW	HEATING Efficiency	COOLING Output	COOLING Efficiency	Status
York ZT061N07H2	*Packaged DX*	*2*	*65,000*	*0.0*	*81% AFUE*	*63,300*	*13 SEER / 11.8 EER*	*New*
York ZT048N06H2	*Packaged DX*	*1*	*49,000*	*0.0*	*82% AFUE*	*50,400*	*14 SEER / 11.6 EER*	*New*
York ZJ130156I2	*Packaged DX*	*2*	*144,000*	*0.0*	*80% AFUE*	*130,000*	*12.0 EER*	*New*
York ZJ037N07I82	*Packaged DX*	*1*	*65,000*	*0.0*	*82% AFUE*	*37,000*	*15.0 SEER / 12.2 EER*	*New*

CENTRAL SYSTEM FAN SUMMARY

System Name	Fan Type	Economizer Type	SUPPLY FAN CFM	SUPPLY FAN BHP	RETURN FAN CFM	RETURN FAN BHP
York ZT061N07H2	*Constant Volume*	*Fixed Temp (Integrated)*	*2,000*	*0.94*	*none*	
York ZT048N06H2	*Constant Volume*	*No Economizer*	*1,600*	*0.68*	*none*	
York ZJ130156I2	*Constant Volume*	*Fixed Temp (integrated)*	*4,000*	*0.45*	*none*	
York ZJ037N07I82	*Constant Volume*	*No Economizer*	*1,200*	*0.45*	*none*	

ENVELOPE MANDATORY MEASURES: NONRESIDENTIAL — ENV-MM

Project Name: *Walgreens* — Date: *10/10/2014*

DESCRIPTION

Building Envelope Measures:

§110.8(a):	Installed insulating material shall have been certified by the manufacturer to comply with the California Quality Standards for insulating material, Title 20 Chapter 4, Article 3.
§110.8(c):	All Insulating Materials shall be installed in compliance with the flame spread rating and smoke density requirements of Sections 2602 and 707 of Title 24, Part 2.
§110.8(f):	The opaque portions of framed demising walls in nonresidential buildings shall have insulation with an installed R-value of no less than R-13 between framing members.
§110.7(a):	All Exterior Joints and openings in the building that are observable sources of air leakage shall be caulked, gasketed, weatherstripped or otherwise sealed.
§110.6(a):	Manufactured fenestration products and exterior doors shall have air infiltration rates not exceeding 0.3 cfm/ft^2 of window area, 0.3 cfm/ft^2 of door area for residential doors, 0.3 cfm/ft^2 of door area for nonresidential single doors (swinging and sliding), and 1.0 cfm/ft^2 for nonresidential double doors (swinging).
§110.6(a):	Fenestration U-factor shall be rated in accordance with NFRC 100, or the applicable default U-factor.
§110.6(a) :	Fenestration SHGC shall be rated in accordance with NFRC 200, or NFRC 100 for site-built fenestration, or the applicable default SHGC.
§110.6(b):	Site Constructed Doors, Windows and Skylights shall be caulked between the unit and the building, and shall be weatherstripped (except for unframed glass doors and fire doors).

HM MECHANICAL CONSULTANTS
8517 Earhart Rd, Suite 230
Oakland, CA 94621
510-569-2000

I HEREBY CERTIFY THAT THIS PLAN AND SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT OR ENGINEER UNDER THE LAWS OF THE STATE OF CALIFORNIA AS INDICATED BY MY HAND AND SEAL

REGISTERED PROFESSIONAL ENGINEER — SANJIT L. HENNINGS — No. M20245 — MECHANICAL — STATE OF CALIFORNIA

Walgreens
FACILITIES PLANNING
108 WILMOT ROAD
DEERFIELD, IL 60015-5105

TITLE 24

STORE NUMBER 15078

WALGREENS
OAK GROVE ROAD
WALNUT CREEK, CA
NEW STORE

NO	DATE	BY	REVISIONS
1	12/12/14		CITY AND WALGREENS PLAN CHECK COMMENTS

CADD PLOT:
DRAWN BY:
DATE: 10/14/2014
REVIEWED:

T24-2

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